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# Community Mobilization

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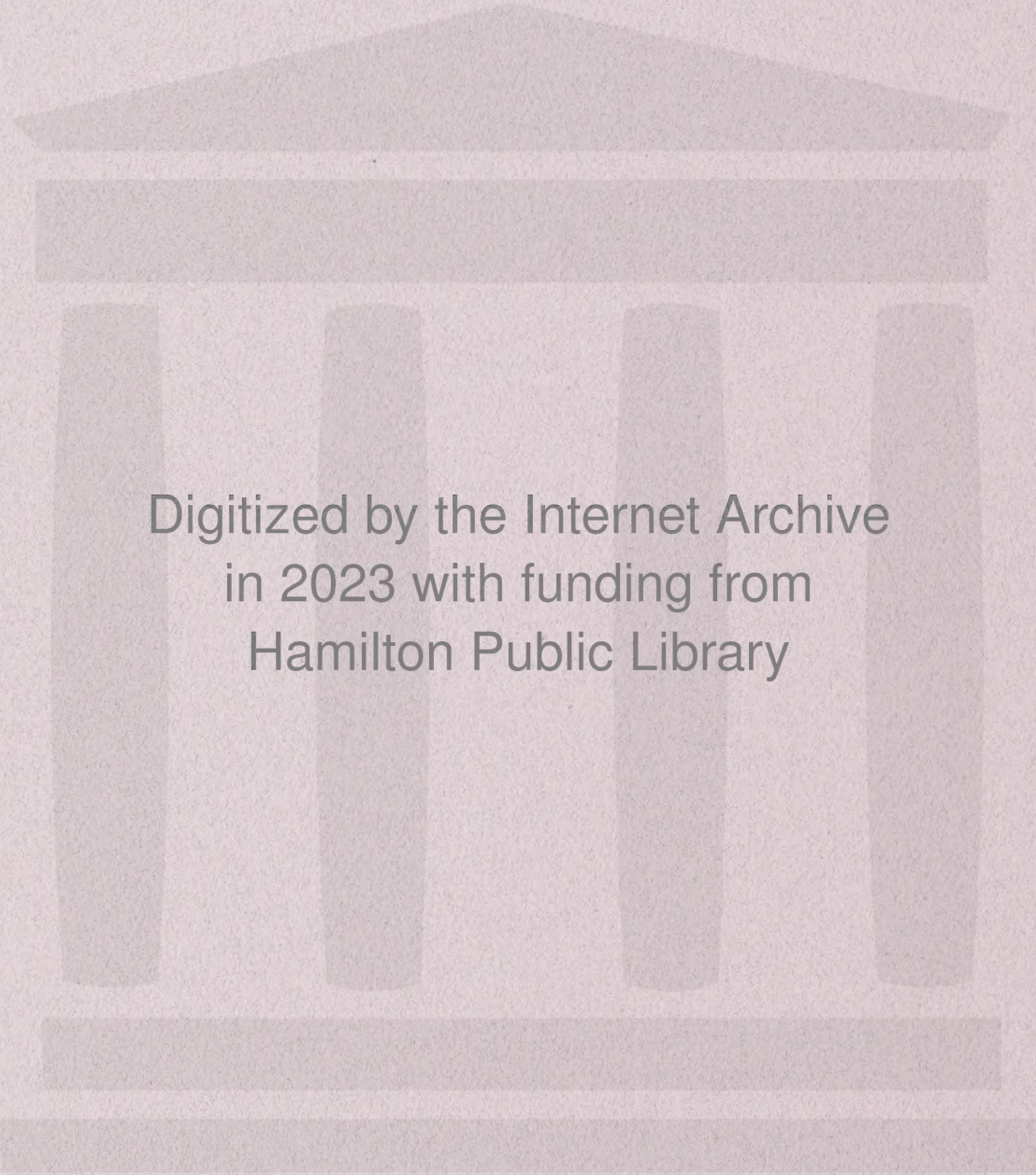
# Prevention of Child Pedestrian Injuries

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**Community Mobilization**  
**on**  
**Prevention of Child Pedestrian Injuries**

**Hamilton-Wentworth**  
**Department of Public Health Services**  
(A Teaching Health Unit Affiliated with McMaster University)



**Final Report**  
**March 1993**

**Prepared for the Ontario Ministry of Transportation**  
**Project No: 909103**



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## Executive Summary

Injuries sustained as the result of collisions with motor vehicles are dramatically more prevalent in Ontario in five to nine year olds and are the most common cause of death for children under 15 years of age. Three factors contribute to this:

**Childhood Characteristics:** five to nine year olds have difficulty assessing distance, speeds, and localizing sounds.

**Driver Behaviour:** speeding drivers, failure to yield the right of way and disregard for traffic signals.

**The Environment:** road design, planning of communities, and neighbourhoods and parked cars; research also shows these children are more likely to be from deprived neighbourhoods with high population density.

In Hamilton-Wentworth, the Department of Public Health Services, with project funding from the Ministry of Transportation, has progressed through the community mobilization steps as identified in the Ontario Ministry of Health's document "Community Health in Action: Healthy Lifestyles Promotion Program". These steps have facilitated mobilization of the community to address the epidemic of childhood injuries and deaths.

The first step of the project was to conduct research and present the findings in a widely distributed newsletter which mapped the hazardous neighbourhoods (Step I).

In the next step, involvement of the community over a 24 month period was coordinated by a public health nurse who developed a network of community activists, parents, elementary school principals, police, politicians, public health nurses in schools and other health professionals (Step II).

Through discussions with these groups, an assessment of the problem identified common concerns: speeding vehicles in school zones; schools and children separated by major busy thoroughfares; little enforcement of speed limits; and, residential areas that must endure large volumes of through traffic (Step III).

Community decisions about what to do were arrived at by two major groups: First, the Regional Municipality's Traffic and Engineering Committee supported a public forum on pedestrian safety at month 11; production of a Traffic Department report at month 15; and approval of the establishment of a Pedestrian Advisory Sub-Committee for the Region at month 17. Second, project staff in the Department of Public Health Services, key community activists and a community development consultant met at month 20 to review progress and decide on a focused strategy. The group decided to offer a program to teach parents how to develop pedestrian safety skills in young children. The police assisted with the review of the effectiveness research on such programs and are assigning a significant amount of their resources to this program. Goals for the parent program were identified and evaluation of the impact of this approach will be assessed (Step IV).

The prevalence of injuries and deaths are presented but too short a time has elapsed since the community mobilization activities to attribute any change to these indicators. The subsequent steps in the community mobilization process will include monitoring of the occurrence of child pedestrian injuries.

## Acknowledgements

This project was led within the Hamilton-Wentworth Department of Public Health Services by the following project team: Larry W. Chambers, Cathy Buffett, Vicki Woodcox, Sandy Isaacs (now with the Wellington-Dufferin Health Unit), Kim Sheppard and Caroline Matovick. However, as this was a community-based project, numerous others assisted with and made major contributions to the project. In particular, we thank Wendy Moore-Spors, Stuart James, and Hart Solomon. Special thanks is offered to Nancy Johnson, who prepared this report and Terry Montgomery, who prepared the tables, figures and the final formatting.

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## **1.0 Introduction**

At a strategic planning meeting of the Hamilton-Wentworth Department of Public Health Services in 1988, childhood pedestrian injury prevention was identified as a health goal that the Department of Public Health Services (DPHS) could address on an inter-divisional basis. A committee which included members from the nursing, inspection, nutrition, dental, and child and adolescent services divisions was formed and research was conducted to determine the extent to which child pedestrian injury represents a public health issue and the magnitude to which it is a problem in Hamilton-Wentworth. It was found that traffic-related injuries and deaths to children are one of the most serious child health problems in Canada. Pedestrian injuries are the most frequent cause of "accidental" death among Canadian children. The economic burden of medical care for injuries is enormous. In 1986, injuries presented the second largest cost to the Canadian health care system. Eleven billion dollars were allocated to injuries -- nearly two million dollars more than was spent on cancer or musculoskeletal diseases (Ontario Public Health Association, 1992).

An examination of the Hamilton-Wentworth Collision Data for the most recent year available (1987) indicated that 70 children were injured in pedestrian-motor vehicle collisions. It was also found that children between the ages of five and nine years were particularly at risk for injury. In fact, children between the ages of five and nine years were three times more likely to be involved in a collision with a vehicle than any other age group (see Figure 1). The Interdivisional DPHS Committee studying the injury prevention issue, thus decided to focus its efforts on child pedestrian injuries among children in this age

group. Next, a review of the injury prevention literature was undertaken to gain a better understanding of the factors contributing to child pedestrian injury. Concurrently, the Health Priorities Analysis Unit conducted a more in-depth analysis of regional data on child pedestrian injuries among the five- to nine-year-old age group for the years 1985 to 1987. The purpose of this analysis was to identify high risk or "hazardous" neighbourhoods.

### **1.1 Factors Contributing to Child Pedestrian Injury**

A number of factors including child characteristics and behaviour, driver behaviour, and the physical and social environment were found to contribute to the risk of child pedestrian injury. Rivara et al (1982), Howarth et al (1974) and Firth (1982) found that boys are twice as likely as girls to be injured in a pedestrian-motor vehicle collision. Whether this difference is a result of developmental differences, differences in socialization, or differential exposure is unclear. Studies by Hoffman et al (1980), Embry and Malfetti (1981), Vinje (1981), and Sandels (1975) indicate that children of both sexes have behavioural and developmental limitations that hinder them from practising safe pedestrian behaviour. Michon (1981), for example, suggests that children do not possess the sensory or cognitive ability to cope with present-day traffic. Along the same lines, Gustafsson (1979) argues that their inability to assess distances, speeds, and to localize sounds adequately put them at a disadvantage. MacWilliam et al (1987) suggest that children's natural behaviours such as their play activities increase their exposure to accidents. For example, Snyder and Knoblauch (1971) found that "dart-outs" account for 50 to 60 percent of injuries to children 5 to 14 years of age. Rivara (1990) found that few injuries occur after daylight hours when children are less likely to be playing outside.

Driver behaviour is also a key factor in child pedestrian injury. Synder and Knoblauch (1971) found that driver failure to search and detect the crossing pedestrian or to judge correctly pedestrian action, resulted in one-third of pedestrian-motor vehicle collisions in their study population. Similarly, Baker et al (1982) report that driver negligence was implicated in nearly half (46%) of pedestrian fatalities in Baltimore. Fifty-eight percent of these drivers were found to have poor driving records. In fact, 23 of 180 drivers who had killed pedestrians were previously assigned to driver rehabilitation clinics. Moreover, the rate of speeding convictions in the four months after the fatal collisions was as great among this group of drivers as before the collision.

Socio-economic factors appear to play a role in child pedestrian injury as well. For example, several studies (Rivara et al, 1985; Neresian et al, 1985; Langley et al, 1980; Pless et al, 1987; Dougherty et al, 1990) indicate that child pedestrian injuries are two to three times more likely in "poverty" area where there are more female-headed households, more families living below the poverty line, and greater household crowding. Such areas, however, are likely to have high traffic volumes and density, higher average and posted speed limits, fewer pedestrian control devices, and fewer alternatives to the street (such as parks and playgrounds) for play. These are important and alterable risk factors in the child's physical environment.

The World Health Organization's (1981) report on "Prevention of Traffic Accidents in Childhood" highlights several other aspects of the child's physical environment that contribute to pedestrian injury. These include: road design (type of street or road, pedestrian crossings, and traffic lights); traffic characteristics (traffic density, speed, number

of pedestrians crossing the road); and environmental conditions (old or new area, urban, suburban, or rural area, residential area, population density, playground facilities, number of schools/nursery schools in the area). A number of environmental modifications such as speed bumps, painted crosswalks, underpasses and overpasses, restricted curb parking, "no-right-hand-turns-on-red-light," and conversion of two-way streets to one-way streets have been proposed to reduce child pedestrian injuries. Evidence with respect to their effectiveness is limited and conflicting (Allen and Walsh, 1975; Rivara et al, 1989; Highway Research Record, 1972; Wade et al, 1982; Zeeger and Zeeger, 1988).

Also important are parental attitudes. Foot et al (1982) found that the majority of parents, teachers, and police officers in England place the blame (and hence the responsibility) for pedestrian injuries on the child. As a result, most interventions to improve child pedestrian safety have focused on improving children's skills as pedestrians. In a review of child pedestrian skills training programs Rivara (1990) found that most are ineffective. He states that none of these programs "can consistently produce large increases in correct pedestrian behaviour by children in high risk groups" (1990:pg 694). In an earlier article (1989), Rivara et al argued that parents' and society's expectations of children's traffic skills exceed the children's capabilities. Recognizing that parents set the expectations for their children's performance in traffic, several parent-guided training programs have been developed (Limbourg and Gerber 1981; Rothengatter, 1984) to extend and reinforce educational efforts begun in schools. These programs appear to have met with some success in reducing child pedestrian injuries.

## **1.2 Identifying "Hazardous" Neighbourhoods and Development of a Community Mobilization Project**

Using data obtained from the City of Hamilton Traffic Department for the years 1985 to 1987, total number of pedestrian injuries and the injury rate per thousand children for the five- to nine-year age group were mapped by neighbourhood. Neighbourhoods were defined by geographical boundaries determined by the Department of Planning and Development of the Region of Hamilton-Wentworth. It was found that injuries among child pedestrians age five to nine years were concentrated in a few neighbourhoods (see Figure 2). Given the role that certain socio-economic factors such as income level, and crowding, appear to play in child pedestrian injury, data on percentage of low income families and number of persons per square mile in each neighbourhood was also obtained and mapped. The following criteria were then used to select target neighbourhoods for community action:

### **Primary Criterion**

1. greater than ten pedestrian accidents in children between five and nine years reported between 1985 and 1987 (City of Hamilton, Traffic Department);

### **Secondary Criteria**

2. pedestrian injury rate greater than 24/1000 for children aged five to nine years during the period between 1985 and 1987 (City of Hamilton, Traffic Department);
3. greater than 21 percent low income families according to the 1981 Census (Social Planning and Research Council of Hamilton and District, 1988);

4. population density greater than 6000 persons per square mile (Health Priorities Analysis Unit, 1988).

On the basis of these criteria, half of the geographical neighbourhoods in the area defined as Planning Unit 66 as well as two others outside of Planning Unit 66 were selected for encouraging community action around the issue of child pedestrian injury.

A Community Mobilization Project was designed to involve parents, citizens, and agencies with the Hamilton-Wentworth Department of Public Health Services taking the lead. Specifically, the DPHS's role in the project would be:

1. To use a multi-pronged approach which would include education, legislative, and environmental initiatives.
2. To promote public participation.
3. To support neighbourhood ownership and control of child pedestrian safety initiatives.
4. To foster the development of formal and informal support networks in the community.
5. To provide accessible and "digestible" information about the problem to the community.

The overall goals of the project were defined as follows:

1. To empower people to gain greater control over their health.
2. To reduce morbidity and mortality from trauma.
3. To foster strong and supportive communities.

These goals echo Goals 2.1, 4.4, and 3.2 outlined in the Report of the Panel on Health

Goals for Ontario (Ontario Ministry of Health, 1987), which were also adopted by the Ontario Premier's Council on Health (Knox, 1988).

Project objectives were divided into two broad categories of process and task objectives:

### **Process Objectives**

- A. To strengthen the ability of citizens in target neighbourhoods to advocate for change in public policies that would reduce the high rate of pedestrian injuries among children aged five to nine years.
- B. To support neighbourhood ownership and control of child pedestrian safety initiatives.

### **Task Objectives**

- A. To reduce the number of pedestrian injuries among children aged five to nine years in target neighbourhoods.

The Ontario Ministry of Health's "Eleven Steps of Community Action" (1990) was adopted as a framework for achieving both the process and task objectives (see Figure 3).

## **2.0 Eleven Steps to Community Action on Child Pedestrian Injury**

Mobilizing community involvement is a lengthy process requiring a great deal of effort to plan and implement. While the Child Pedestrian Injury Prevention Project used the Eleven Step process, full implementation of the eleven steps was not possible within the scope of this two-year project. The first nine steps, however, were begun (see Figure 4). It should be noted that although we have chosen to describe the Project activities within the Eleven Step framework, the steps are not discrete. Often activities associated with one step

were initiated at the same time as, or ran concurrently with, activities in another step.

## **2.1 Step 1: Getting Started**

The initial step in the Eleven Step community action process involves getting the facts about health problems in the community and seeking the community's opinions of health issues.

Much of the work of "getting the facts" about the health problem had been done in designing and seeking funding for the project. In order to obtain the community's opinions of the issue and provide its members with accessible and "digestible" information about child pedestrian injury, an issue of the INFOWATCH newsletter entitled "Children Can't Fly" was prepared by the Health Priorities Analysis Unit, McMaster Faculty of Health Sciences (see Appendix 1) and distributed to households, recreation centres, and schools in the six "hazardous" neighbourhoods.

The information in the INFOWATCH newsletter created significant community interest and prompted public response (Process Objective B) through newspaper articles, a letter, and telephone response (Appendices 2 and 3). One telephone inquiry was from a neighbourhood pharmacist. He was not a resident of the neighbourhood but was concerned about the safety of children walking near his store. He had read the INFOWATCH article and asked for 75 copies of the newsletter to distribute to his neighbours as he was planning to get a petition signed which he would then present to his alderman.

Another publication, RAPPORT, a DPHS research newsletter (see Appendix 4), was distributed to 400 individuals including Department of Public Health Services staff, Faculty of Health Sciences (McMaster University) members, other health departments in the

province, many Ministry of Health officials, and city and regional politicians. This publication described the project and invited responses.

## **2.2 Step 2: Involving Your Community**

"Involving Your Community" refers to identifying and contacting key people and organizations within a community.

Upon receipt of the Ministry of Transportation funding for the project, a resource person, with the title of Project Co-ordinator (within the Regional Municipality of Hamilton-Wentworth, Department of Public Health Services) was appointed to facilitate and monitor the community action process in each "hazardous" neighbourhood. Over the course of the project, the Co-ordinator developed a network of community activists (7), parents (50), elementary school principals (12), home and school associations (4), police (5), politicians (4), public health nurses in schools (10), traffic department officials (5), and other health and education professionals (9). This network was instrumental in creating and sustaining a dialogue in the community on the issue of child pedestrian injury prevention.

## **2.3 Step 3: Assessing Your Community**

"Assessing Your Community" entails community collaboration in locating resources, learning about the past history of the community and what is presently influencing it, as well as assessing community involvement.

Various parents, concerned citizens, and school officials who became a part of the network helped to provide the Project Co-ordinator with a profile of community concern and a history of previous community efforts to improve child pedestrian safety in the six

"hazardous" neighbourhoods. For example, in one neighbourhood, the Project Co-ordinator spoke with several key community members including a woman who is the driving force behind a monthly newsletter produced for the neighbourhood. She invited the Project Co-ordinator to write an article for the newspaper, which has a circulation of about 2500, as a means of introducing herself and the project to the neighbourhood. The Project Co-ordinator also contacted the Program Director for Welcome Inn (a community-based organization concerned with multicultural social and health issues) and was subsequently invited to a meeting of various organizations serving this neighbourhood to discuss the project.

Another opportunity to inform the neighbourhood about the project and to learn more about past community initiatives arose out of a conversation with the community liaison worker for the Hamilton Board of Education, who works in several schools in the neighbourhood. She informed the Project Co-ordinator that many of the parents were concerned about safety issues and were organizing a community meeting at the local school to discuss the matter. She invited the Project Co-ordinator to come and talk about the issue of child pedestrian safety. As well she provided the Project Co-ordinator with the names of two individuals who had been active in getting signal lights installed at several busy intersections and having right-hand turns restricted at another intersection.

In another neighbourhood, the Project Co-ordinator spoke with the safety representative on the Home and School Association and two other women who have children attending the same school. Together these women had identified a number of issues relating to child pedestrian safety in their neighbourhood and, in the past, had been

instrumental in getting a crossing guard for a busy intersection. The Project Co-ordinator also contacted a man who, on a number of occasions, had brought the issue of pedestrian safety to the attention of the local alderman.

#### **2.4. Steps 4 and 5: Making Some Decisions and Setting Desired Changes**

"Making Some Decisions" involves choosing one or more health issues and target groups for community action while "Setting Desired Changes" involves goal and objective setting.

In a series of informal discussions, lead by the Project Co-ordinator, concerned individuals and groups in the six hazardous neighbourhoods identified the common concerns related to child pedestrian safety including: dangerous intersections, heavy truck traffic on certain streets, speeding vehicles in school zones, schools and children separated by major busy thoroughfares (see Figure 5), lack of enforcement of speed limits, and large volumes of traffic in residential areas. It was agreed that parents, teachers, principals, police, and traffic department officials must work together to reduce the number of child pedestrian injuries (Task Objective).

#### **2.5 Step 6: Finding Your Challenges and Opportunities**

"Finding Your Challenges and Opportunities" refers to taking stock of and learning more about what resources and activities already exist and then taking advantage of them to further the community action process.

An important opportunity for community action presented itself when a city alderman was contacted by the Project Co-ordinator to discuss the Project. Four of the six

"hazardous" neighbourhoods were in his ward. This alderman had already submitted a proposal to the Traffic and Environment Committee to reduce speed limits in school zones. The proposal had been rejected on the evidence of a Traffic Department study that indicated that this type of intervention did not have a significant effect on reducing the risks to child pedestrians. It was argued by the Committee that the costs would outweigh the benefits. The alderman asked the Project Co-ordinator to make a presentation at an upcoming meeting of this Committee and to provide him with copies of INFOWATCH to circulate to Committee members prior to the meeting. Subsequently, the Committee voted to hold a public forum on the issue.

The organization of a public forum was seen as an important means of bringing together citizens, community organizations, and local officials to share concerns about child pedestrian injury and initiate a process of working together to find solutions. The forum was advertised in the local newspaper (see Appendix 5). The Project Co-ordinator met with the planning group of the forum to ensure that community members would be heard (Process Objectives A and B). Thirty people attended the forum and sixteen presentations were made from various individuals and groups including the Project Coordinator, the City's Traffic Department, the Hamilton-Wentworth Regional Police, and citizens and community groups concerned with traffic safety (see Figure 6). The public forum demonstrated that there was keen interest in the pedestrian safety issue not just within the six targeted neighbourhoods. The forum attracted participants from across the city. Specific areas (for example, the need for bicycle paths, pedestrian crossing signs, city parking changes) were identified for political and legislative action.

Following the public forum, the Traffic Department was asked by the Traffic and Environment Committee to prepare a report on the event (see Appendix 6). This report was distributed to citizens and associations for community response prior to its presentation to the Transport and Environment Committee. A number of these citizens and associations had concerns about the report. Feeling that there was a need for further action on the issue, the Pedestrian Coalition was formed. This call for action represented a shift in ownership of the issue to the citizens and a movement toward community-based decision-making (Process Objective A and B).

The first task of this coalition was to respond to the Traffic Department's report at the Traffic and Environment Committee meeting. A delegation (comprised of the Project Co-ordinator, a citizen, and a representative of the Hamilton-Wentworth Regional Police) was sent to make a presentation (see Appendix 7). The message delivered by the Coalition delegates was that all stakeholders must be given a voice in addressing the issue of pedestrian injury (Process Objective A).

In response, the Traffic and Environment Committee endorsed the formation of an advisory committee to deal with pedestrian safety in the city of Hamilton (see Appendix 8). This endorsement was then put forward for approval by City Council. The approval process was delayed because of the municipal elections. Approval was finally received in January 1992, at which time the city's Traffic Department was charged with establishing the terms of reference (see Appendix 9) for the new committee and its proposed membership (see Appendix 10).

Around the same time as the public forum was being organized, the Hamilton-

Wentworth crossing guard program became a hotly debated issue in several neighbourhoods in response to the Traffic Department's decision to remove eight crossing guards across the city. Community reaction was strong. A protest and public meeting were quickly organized (see Appendix 11), and a request was made to the Project Co-ordinator to act as resource person. The crossing guard issue was thus viewed as an important community-initiated and legislative-focused initiative within the Project (Process Objective A).

Another identified opportunity for a legislative-focused initiative for the Project was the proposed perimeter road. The road, if built, would run through the north end of Hamilton (mainly an industrial area) and allow easier access to Highway 403, thus reducing heavy traffic flow through the core areas of the city, which have a higher incidence of pedestrian injury.

Also about the time of the public forum, the Hamilton-Wentworth Regional Police completed a five-year review of data on cycle and pedestrian injuries involving children under the age of 16. The Hamilton-Wentworth Regional Police had been involved in elementary school classroom education on bicycle and pedestrian safety for a number of years. As a result of their five-year review, however, the Police were reconsidering the direction of their current education program. The five-year data indicated that their classroom activities had not been effective in reducing the number of child pedestrian injuries. The Police sought community involvement with Home and School Associations, Public Health Nurses, preschools/daycares, and parents (Process Objective B) regarding the design, implementation, and evaluation of a new education program. Recognizing that education is an important but not exclusive component in child pedestrian safety initiatives,

the Project Team felt that this joint effort of the Police and community should be supported.

## **2.6 Step 7: Choosing Your Activities**

The purpose of this step in community activation is to define the gaps in existing services based on the data collected, and to choose activities that will prove effective in reaching Project objectives.

To assist the Project team and the community in the selection of activities for the Project, consultation with an expert in community development was sought. A one-day workshop was hosted by the Project team. Citizens who had voiced interest in the issue of child pedestrian injury were invited to attend. Also invited were members of the Police and Traffic Departments, public health nurses attached to schools, and individuals from the Inspection Division of the Public Health Department. The community development consultant was asked to assist all individuals in attendance to refocus, problem solve, and recognize any gaps in the Project's development process. Two key activities were identified for further action: to pursue citizen representation on the newly formed Pedestrian Sub-Advisory Committee to the Traffic and Environment Committee and to develop an educational program for parents on how to teach children about pedestrian safety.

## **2.7 Steps 8 and 9: Making and Carrying Out Your Plans**

"Making and Carrying Out Your Plans" includes putting together an overall plan for the project, making an action plan for each activity, and implementing them. Three avenues of intervention (education, legislation, engineering) were chosen by the Child Pedestrian Injury Prevention Project and specific strategies were planned and carried out.

### 2.7.1 Education

As previously mentioned, the Hamilton-Wentworth Regional Police found in their five-year review of pedestrian injury data that traditional classroom education was not effective in reducing pedestrian injuries. A literature review by the Project Co-ordinator revealed that educational programs employing an "hands on" approach to teaching traffic skills to children were more successful (Rivara et al, 1991; Rothengatter, 1981; Young and Lee, 1987; Yeaton and Bailey, 1978). These studies showed an improvement in street crossing skills by children who had been involved in an hands-on training program. Rothengatter (1984), in fact, argues that pairing both cognitive instruction and behavioural modification with the parents as educators is the key to improving the road crossing behaviour of children. One study by Limbourg and Gerber (1981) used a parent training program for teaching children pedestrian safety skills and modelled a "community responsibility for health" philosophy. The results of this study indicated that a parent-driven education program is effective, but its success depends on the age of children, training quality, and training frequency with children.

It was decided at the community development one-day workshop, that the Hamilton-Wentworth Regional Police, community members, and the Project Team would work together on a parent training program, and an action plan was developed. A core working group with representatives from the Hamilton-Wentworth Regional Police and the community as well as one representative from the Project team and the Project Co-ordinator, met together to develop the specifics for the parent training program which would be based on Limbourg and Gerber's (1981) research. The Police Community Services

Branch obtained a copy of Limbourg and Gerber's education program. Two community members assisted in adapting the parent training guide for use in Canadian communities as well as in translating it from German into English. The new parent training guide, "Kidestrian," is contained in Appendix 12.

With the help of the Project Co-ordinator, the program was pilot-tested in two neighbourhoods -- one in Planning Unit 66 and another in one of the original "hazardous" neighbourhoods. Evaluations of the pilot program showed that parents found the package to be an effective tool in teaching pedestrian safety to children. Seventy-eight percent of the parents reported practising traffic skills with their children three or more times over the two-week trial period. All of the parents indicated that the instructions were clear and easy to follow and that they would recommend the booklet to other parents, friends, and relatives (see Appendix 13.)

Subsequently, the Project Team approached and received funding from the Canadian Tire Corporation to do a limited printing of the Kidestrian parent training guide. Another school has piloted the guide with a predominantly Asian population.

### **2.7.2 Legislation**

The two areas in which the Project became active in shaping public policy are the Crossing Guard Program and gaining citizen representation on the newly formed Pedestrian Sub-Advisory Committee.

#### **Crossing Guard Program**

It was decided that the Project Co-ordinator would continue to act as a resource person with respect to community initiatives related to the crossing guard program. In one

case, the Project Co-ordinator wrote a letter to a concerned community member who was trying to have a crossing guard assigned to a particular intersection but whose request had been denied by the Traffic and Environment Committee. The letter detailed the results of the Project's community assessment of the issue and the Project's activities. The community activist then put together an impressive package, which included the letter, to present to the Traffic and Environment Committee. This time she was successful and a traffic guard was placed at the intersection several months later.

In another case, the Project Co-ordinator was approached by a community activist from the neighbourhood where the Kidestrian project was being targeted. This activist, in hearing of plans to remove the crossing guard in her neighbourhood, began to rally community support to keep the crossing guard. The Project Co-ordinator wrote a letter in support of the activist's endeavours (Process Objective A), once again detailing the community assessment of the issue and initiatives of the Project.

### **Citizen Representation on the Pedestrian Sub-Advisory Committee**

At the workshop with the community development consultant, concern was expressed by the participants about the membership of the Sub-Advisory Committee (see Appendices 8 and 9 for terms of reference and membership for the Committee). It had been discovered that the Traffic and Environment Committee intended to interview potential citizen representatives for the two positions on the committee. Non-citizen representatives would not be interviewed. The workshop participants put forth a plan whose main goal was to ensure that the committee had representatives who were committed to improving conditions for pedestrians in Hamilton. The plan included sending letters of endorsement (Process

Objective A) for certain citizens who have shown great concern about the issue. As a result, citizens were appointed to the committee. To date, however, the committee has not met and citizens and community organizations are lobbying the city councillor designated as the committee chair to call the first meeting.

### **2.7.3 Engineering**

With respect to the perimeter road proposal, one of the actions of the Child Pedestrian Injury Prevention Project was to provide Project data to city councillors to help them recognize the impact of alternate traffic re-routing on pedestrian safety in the core of the city. Two members of the Project team made a progress report of Project activities in June 1992 to the Health and Social Services Committee. The report underscored the complex nature of the pedestrian injury problem and the importance of intersectorial cooperation in finding solutions. At the time of Project completion, the perimeter road proposal had been postponed for one year, while an environmental impact report was completed. This report will entail an assessment of the need and justification for the perimeter road, the steps in place to mitigate negative effects to the environment (socioeconomic and physical), and the project's affordability. The public will be able to voice their support or concerns at a series of public meetings. Once the assessment process is completed, the findings will be presented at an environmental hearing presided over by an environmental assessment board, which, in turn, will make recommendations to the Ministry of the Environment for the final decision-making process.

## **2.8 Steps 10 and 11: Following Up and Evaluating Your Project**

Steps 10 and 11 involve evaluating outcomes, looking at what worked and what did not in the community action process, and using the results to return to Step 1.

At the outset of the project process and outcome/task objectives were articulated. The process objectives were: (1) to strengthen the ability of citizens in "hazardous" communities to advocate for change in public policies which would reduce pedestrian injuries in children aged five to nine years, and (2) to support neighbourhood ownership and control of child pedestrian safety initiatives. Methods used to evaluate the process objectives included an analysis of the diary kept by the Project Co-ordinator (see Appendix 14) and involvement of a community development expert who consulted with the project team and community representatives at a special one-day workshop (see Appendix 15).

As the description of the first nine "Community Mobilization Steps" demonstrated, there is evidence that the Hamilton-Wentworth community, as a whole, was mobilized to advocate for change in public policies which would reduce child pedestrian injuries. Although initial project efforts focused on the six "hazardous" neighbourhoods identified at the outset, other city neighbourhoods quickly became involved by participating in a community forum, lobbying for crossing guards, forming a Pedestrian Coalition, and pilot-testing the Kidestrian training program.

The outcome or task objective of the project was to reduce the number of injuries among children aged five to nine years in the "hazardous" neighbourhoods. In order to assess this objective, the Project Team negotiated with the Traffic Department to obtain a computer tape containing incidence data on child pedestrian injuries in Hamilton for the years 1978 to 1991. The incidence data were compiled from motor vehicle accident reports

completed by police officers called to the scene of collisions and contain information on the location and time of the accident, age and sex of the pedestrian, degree of injury sustained, type of road (i.e., two-lane, four-lane, one-way, two-way), environmental conditions (i.e., dry, wet, etc.) pedestrian action, and age and condition (i.e., impaired, not impaired) of the driver. (See Appendix 16 for a copy of the motor vehicle accident report and a discussion of the reliability and validity of the data.)

Figure 7 shows the rate of pedestrian injuries to children aged five to nine years for the City of Hamilton and for Planning Unit 66 (which includes four of the six neighbourhoods originally identified as "hazardous") from 1978 to 1991. The lines referred to as A to F in Figure 7 refer to possible post-1991 rates. The Project activities were not confined to Planning Area 66 but involved discussions with officials, agencies and citizens throughout the City of Hamilton. Thus the need to assess Project impact on child pedestrian injuries in both Planning Area 66 and the City of Hamilton as a whole. Incidence rates for both Hamilton and Planning Unit 66 appear to be decreasing over this time period, which is good news but is problematic for evaluation of continued decreases (signal) in injuries which might be attributed to the child pedestrian safety initiatives project. Also problematic for evaluation of the project's impact is the fact that there is considerable year-to-year variability (noise) in injury rates in Planning Unit 66. The project's activities began in 1990 and continued throughout 1991 and into 1992. One could argue, therefore, that 1991 is too early to detect any change in the rate of injuries in either geographical unit. It may be advisable to consider rates for two to three years after the project's completion because of the noise in the data, particularly for Planning Unit 66. Doing so would ensure

that sufficient time has elapsed for the full impact of the project initiatives to be revealed in the incidence data.

Further analysis of this newly obtained dataset revealed four interesting points from a descriptive point of view. First, it was found that 33.9 percent of pedestrian injuries involving children aged five to nine years in Hamilton during the 13-year period occurred in Planning Unit 66 (See Table 1). Planning Unit 66 is located in the core of the city, is cross-sected by four high traffic volume east-west arteries, and is characterized by lower than average income households. Moreover, schools in this area are located such that students often must cross one of the above mentioned major arteries (see Figure 5). Secondly, child pedestrian injuries among five-to nine-year-olds occurred most often during the months of spring and autumn when school is in session and between the hours of 3:30 and 5:00 pm. This period is a peak school and work travel time; children travel home from school and adults from work. It is also a time when children are perhaps able to attend less well to traffic and driver aggression is at its highest (see Figures 8 to 10). Thirdly, it was found that one-way streets, especially those with three and four lanes, were more hazardous than two-way streets (see Figure 11). This finding contradicts earlier reports (Zegeer et al 1984) but the difference may be explained in the way in which the at risk group is defined. However, the Figure 11 data uses "number of miles of one-way and two-way streets in the City of Hamilton" as the denominator in calculating the "risk" of injury. It is acknowledged that this may be a poor estimate of risk as it may not reflect the number of crossings by children. This finding is particularly interesting, in that it contradicts the engineering and planning literature on one-way streets and risk for pedestrian injury. Finally, driver behaviour was

found to play only a minor role in child pedestrian injury. As Figure 12 indicates, in the majority of cases drivers were determined to have been driving properly, going ahead rather than performing other vehicle maneuvers such as turning or reversing, and not driving under the influence of alcohol. It appears that with most injuries in the five-to-nine-year age group the driver had "no chance" to avoid the collision.

### **2.8.1 Second Community Forum - January 1993**

In January 1993, a planning group consisting of a community activist, representatives from the Police Department and the Department of Public Health Services organized an open forum in the Hamilton City Hall (see Appendices 18 and 19). All those who had been involved in the Project were notified as well as citizens in Planning Area 66. Approximately 30 people attended including the Chief of Police and a councillor on the Pedestrian Sub-Advisory Committee which had not yet met.

The Forum consisted of presentations for an hour and discussion of the issues by those attending during the second hour. The presentations included: a Project report using the pedestrian injuries analysis (see Appendix 16); a presentation from the Council on Road Trauma; and, a presentation on the Kidestrian project by the community activist and a police officer. The discussion in the second hour was facilitated by a staff person from the Social Planning and Research Council of Hamilton-Wentworth.

The Forum concluded with a resolution to sign a petition to give the chair of the Pedestrian Sub-Advisory Committee which still had not set a meeting date. The Forum was covered with a half-page article on the first page of "metro" section in the main Hamilton newspaper the next day. The Forum was successful in that the first meeting of the

Committee was subsequently announced by City Hall to occur in February 1993. Also, the Forum provided another opportunity for the issues to be discussed further (see Appendix 20).

### **3.0 Discussion**

In addition to the process and outcome analyses, there are other features of the project that require delineation. First, as with all such projects, community mobilization is a lengthy process and little can be done to speed it up. Secondly, the insertion of Ministry of Transportation funds into the community was a big boost in "kick starting" the project. Thirdly, community mobilization is an "across-the-board" activity which in this project has involved the Hamilton-Wentworth Department of Public Health Services, a variety of community activities, and the political process. Finally, as with all projects which attempt to affect an ongoing problem in the community, there is a need to plan for the continuation of project activities after funding has ended. The recently released "Vision 2020" Regional Government report outlines detailed strategies and actions on how to create a sustainable Region. This report (see excerpts in Appendix 21) released in early 1993, was based on extensive and widespread community consultations. It emphasizes the need for the Region to work to have a transportation system with people, not motor vehicles as the focus. It also calls for development of "a sidewalk/walkway system that provides for accessible, safe, convenient and enjoyable pedestrian movement and meets the needs of all citizens".

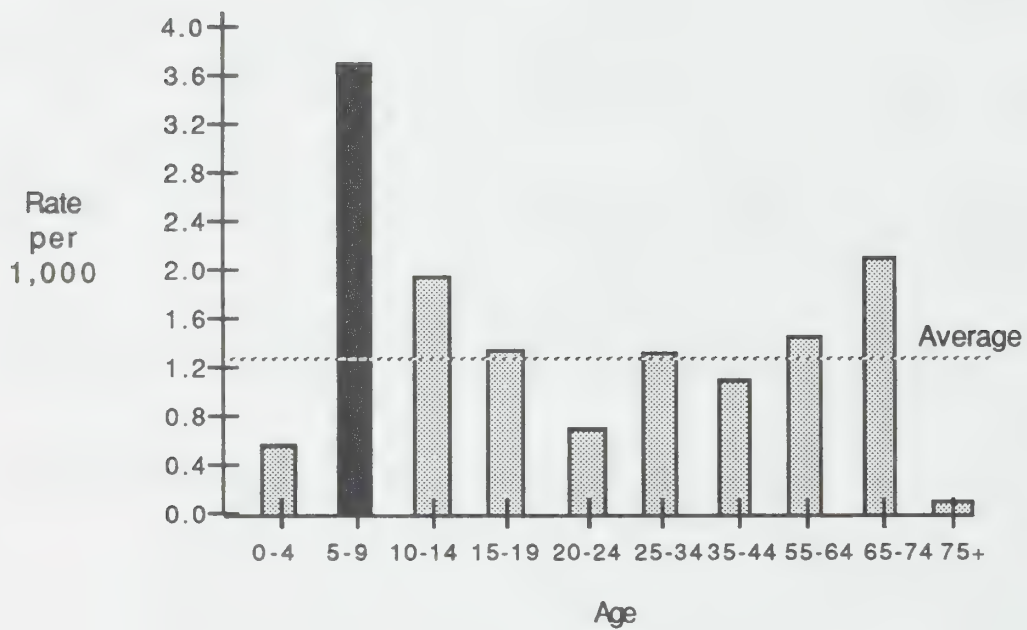
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**Figure 1. Rate of Pedestrian Injuries Per 1,000 Population, by Age, Hamilton-Wentworth, 1987**



→ 5 - 9 year olds were involved in collisions at a rate approximately three times greater than would normally be expected.

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Adapted from: City of Hamilton Traffic Department, 1987 Hamilton-Wentworth Collision Data 1986 Census of Canada, Statistics Canada, Ottawa.



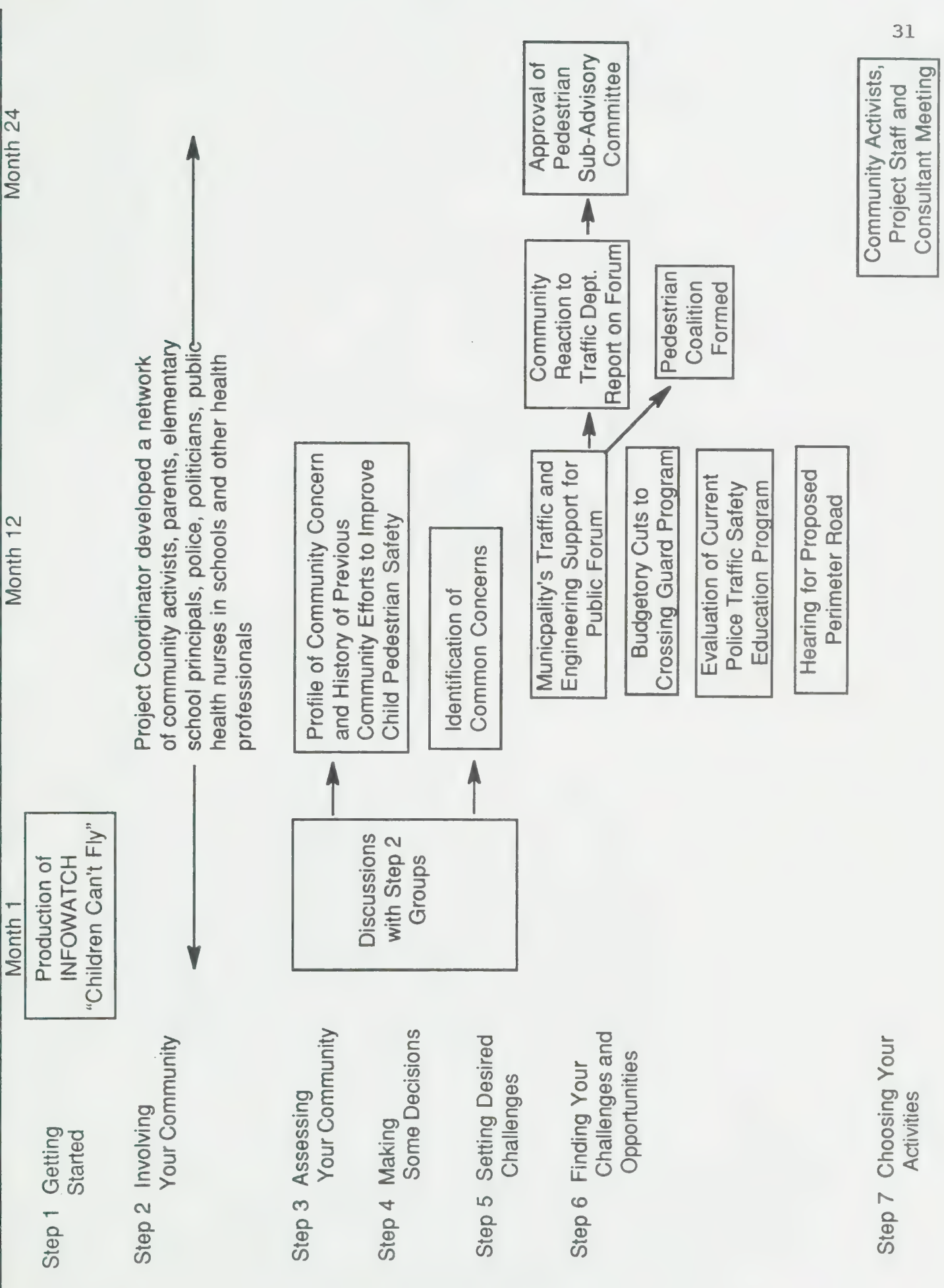
## **Figure 3**

### **Steps in Community Mobilization**

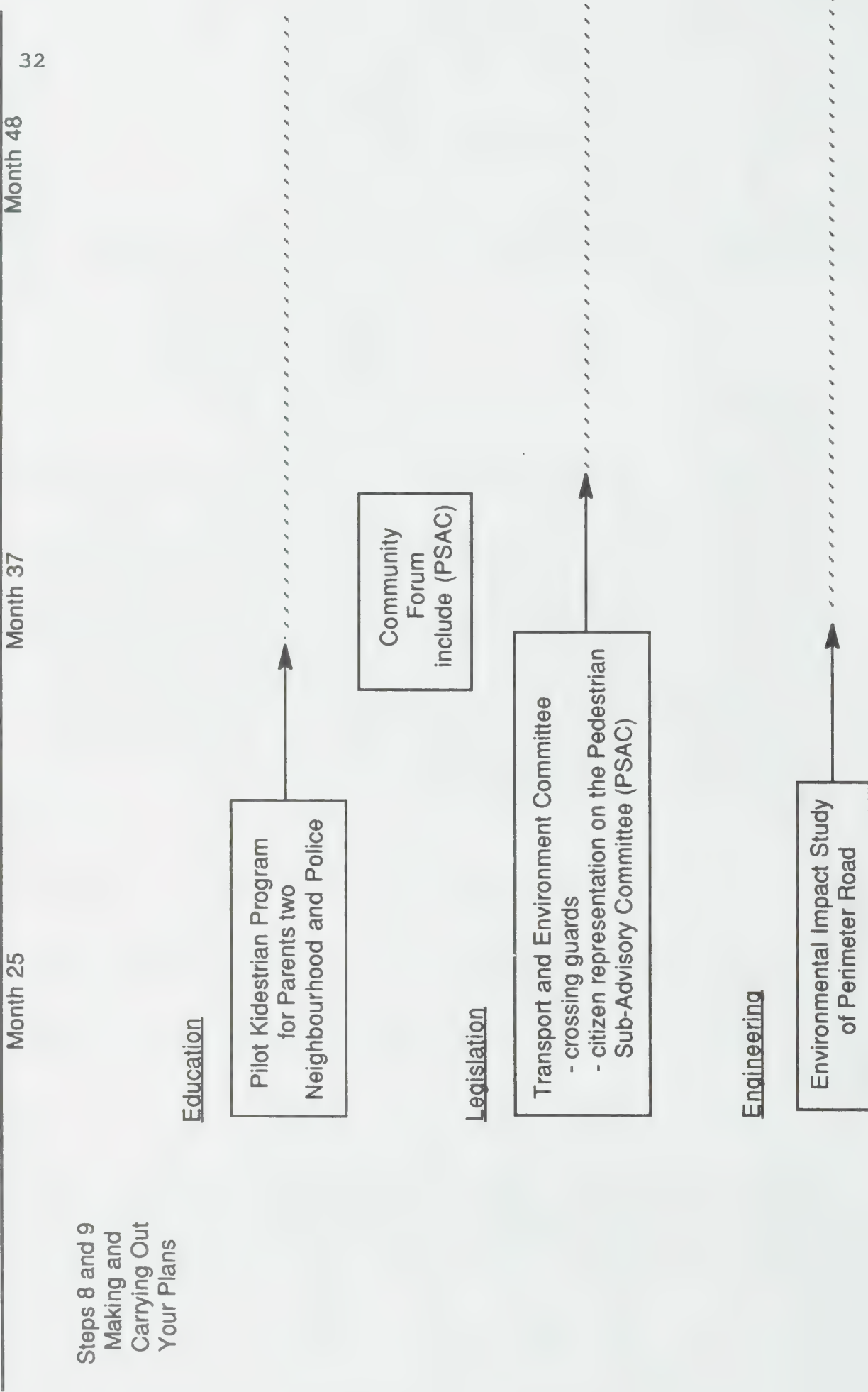
- Step 1    Getting Started
- Step 2    Involving your Community
- Step 3    Assessing your Community
- Step 4    Making Some Decisions
- Step 5    Setting Desired Changes
- Step 6    Finding your Challenges and Opportunities
- Step 7    Choosing your Activities
- Step 8    Making your Plans
- Step 9    Carrying Out your Plan
- Step 10   Following up and Evaluating your Project
- Step 11   Returning to the Path

Source: Ontario Ministry of Health. Community Health Promotion in Action: Healthy Lifestyles Promotion Program. Toronto. Health Promotion Branch, Ministry of Health. Queen's Printer 1990.

Figure 4. Community Mobilization on Prevention of Child Pedestrian Injuries



**Figure 4. Community Mobilization on Prevention of Child Pedestrian Injuries**  
(Continued)



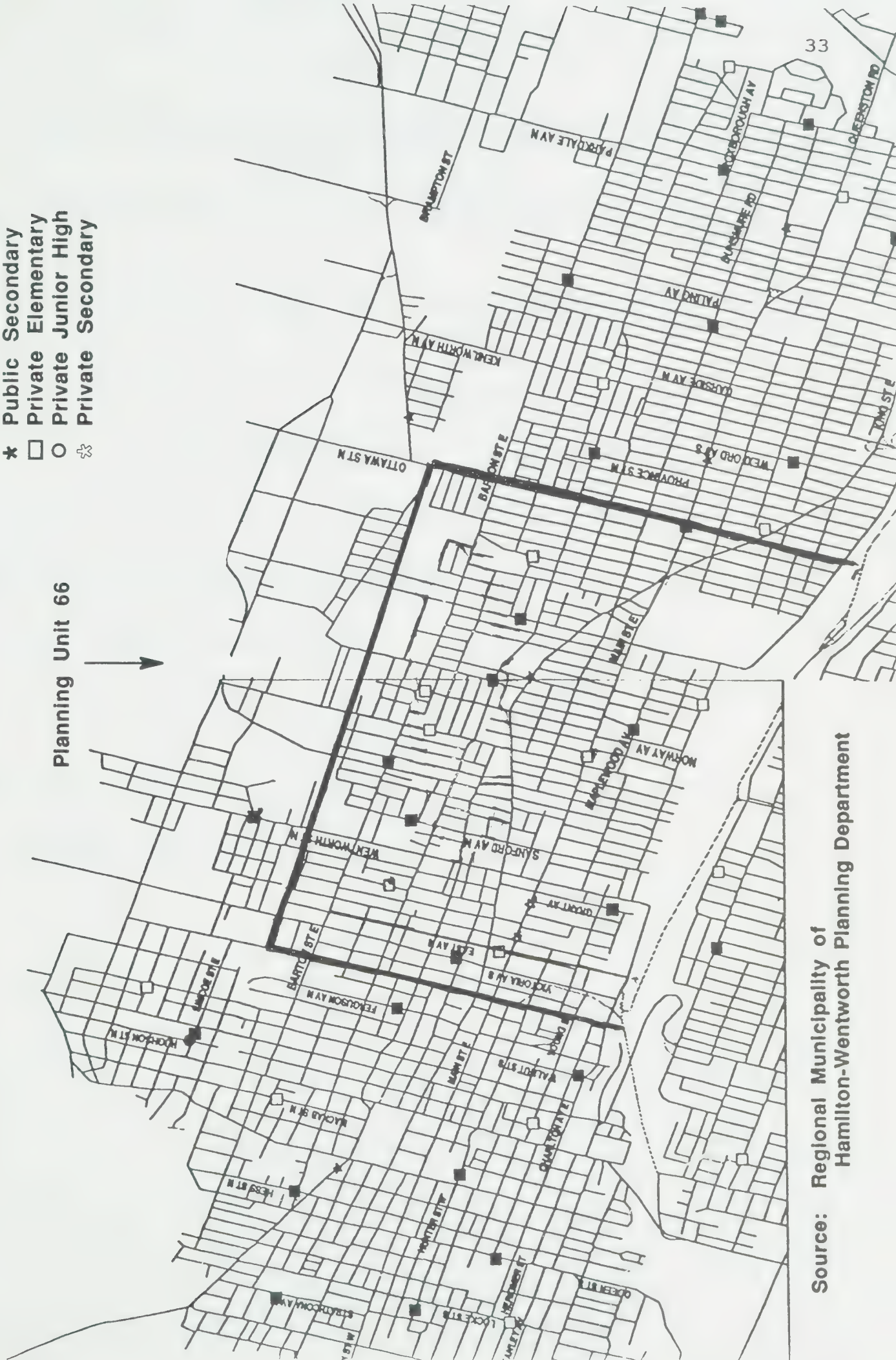
Steps 8 and 9  
Making and  
Carrying Out  
Your Plans

**Figure 5. Locations of Schools in Hamilton 1992**

Type of School

- Public Elementary
- Public Junior High
- \* Public Secondary
- Private Elementary
- Private Junior High
- ✱ Private Secondary

Planning Unit 66



Source: Regional Municipality of Hamilton-Wentworth Planning Department

## Figure 6

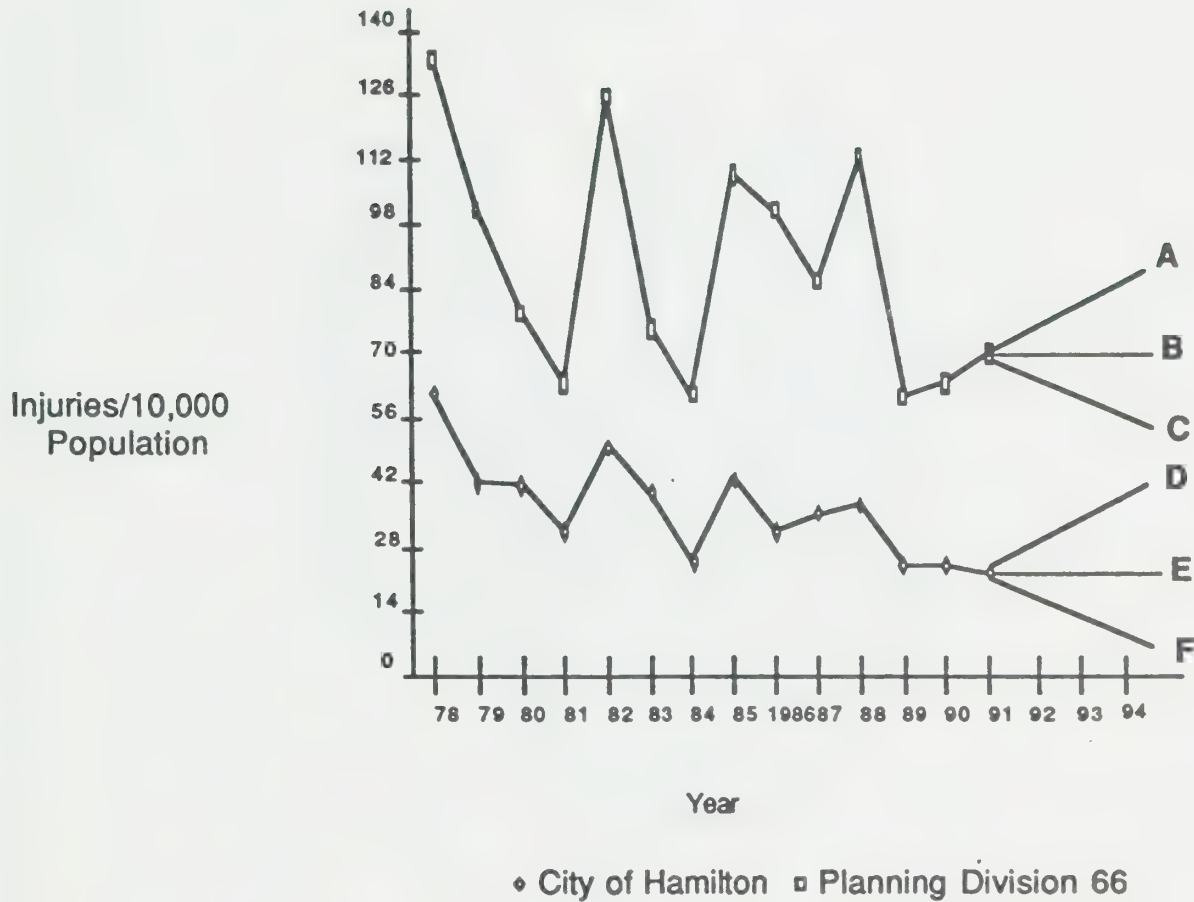
### April 1991 Public Forum Presenters

- Three Citizen Skit "I think I know what the problem is - let's discuss it"
- Hamilton Automobile Club
- Hamilton Bikeways Citizen's Group
- Hamilton Safety Council
- Hamilton Council of Home and School Associations
- Hamilton-Wentworth Department of Public Health Services
- Hamilton Traffic Department
- Home and School Association at Dalewood School
- Council on Road Trauma: Hamilton-Wentworth
- six citizens

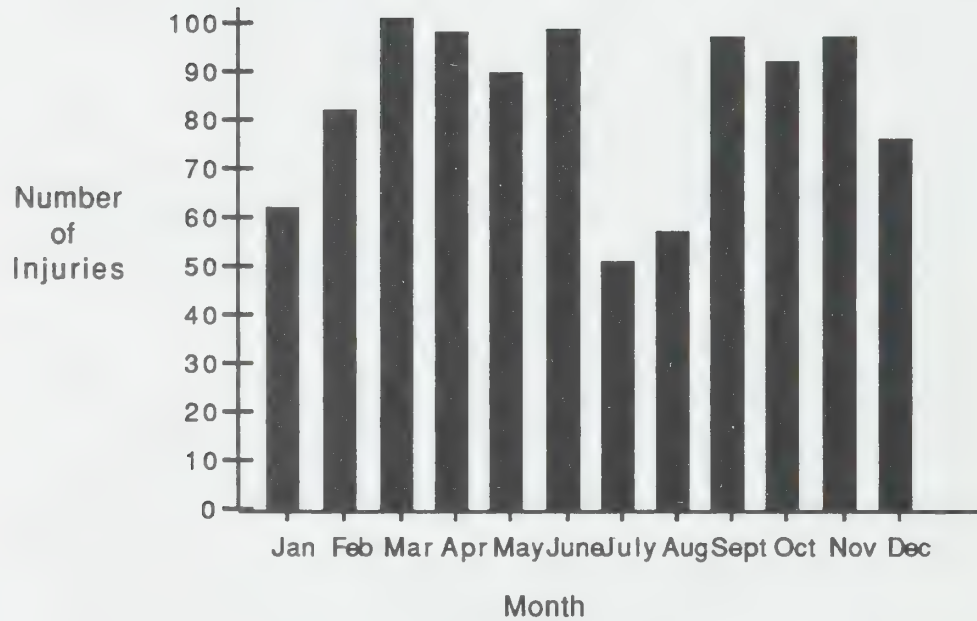
Figure 7

Rates (#/10,000) of Child Pedestrian Injuries Involving  
Children 5 to 9 Yrs Old by Year: Hamilton and Planning  
Unit 66, 1978 - 1991p

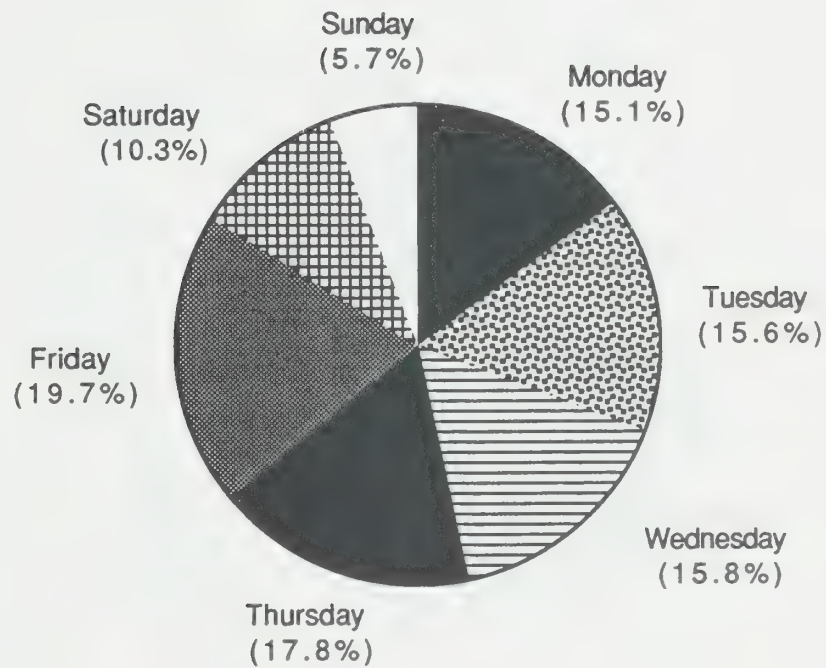
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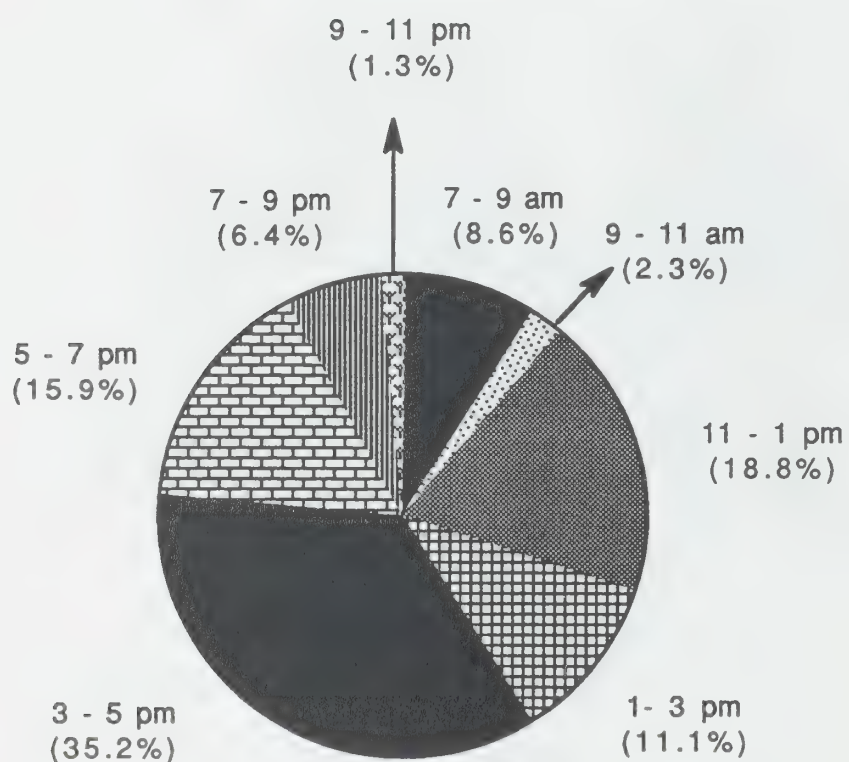
**Figure 8. Number of Child Pedestrian Injuries Involving Children 5 - 9 Yrs Old by Month: Hamilton, 1978 - 1991**



**Figure 9. Distribution of Child Pedestrian Injuries Involving Children 5 - 9 Yrs Old by Day of the Week: Hamilton, 1978 - 1991**



**Figure 10. Distribution of Child Pedestrian Injuries Involving Children 5 - 9 Yrs Old by Time of Day: Hamilton, 1978 to 1991**



**Figure 11. Rate (# per 100 kms) of Child Pedestrian Injuries Involving Children 5 - 9 Yrs Old by # of Lanes, One-Way vs Two-Way: Hamilton, 1978 - 1991**

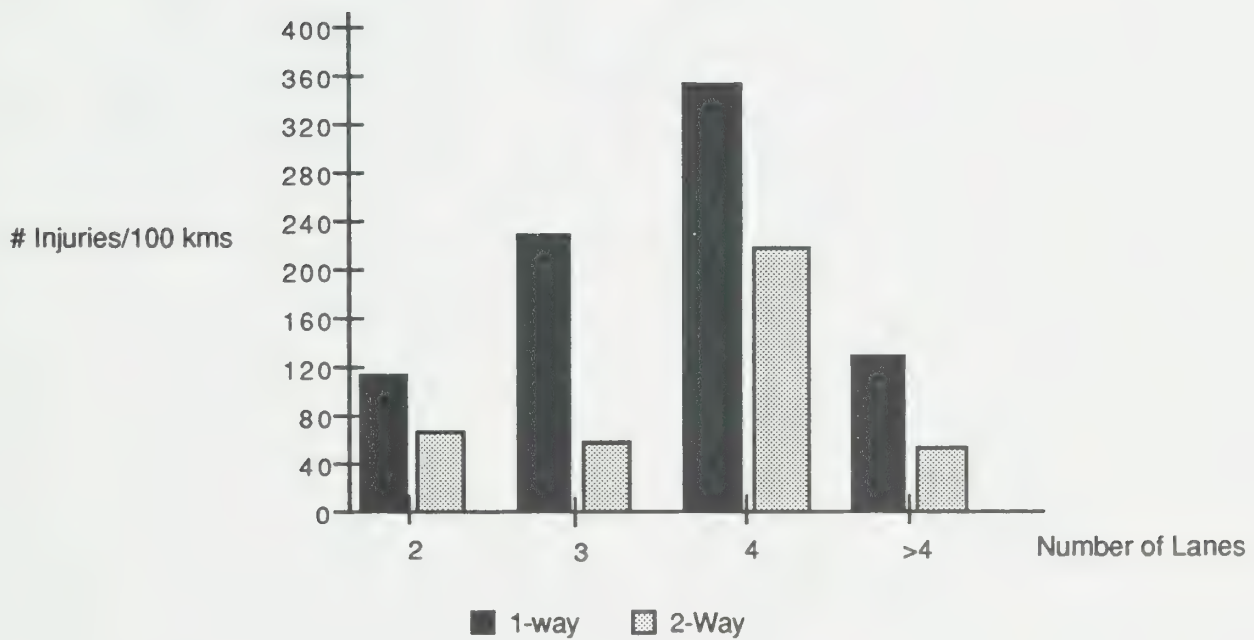
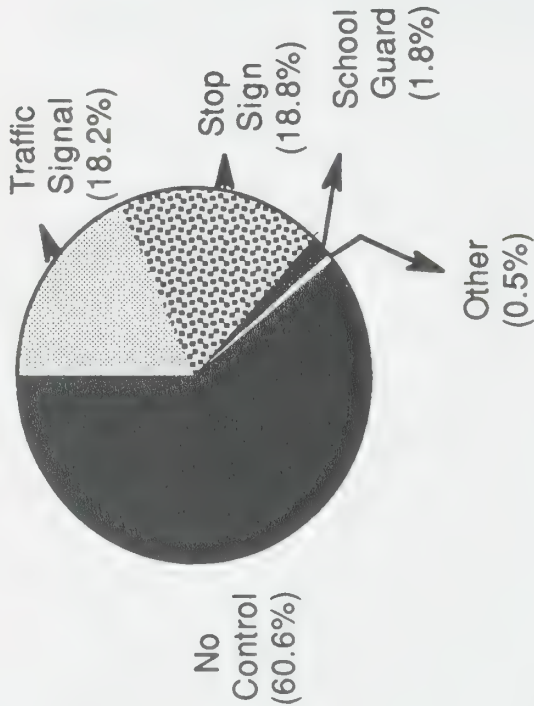
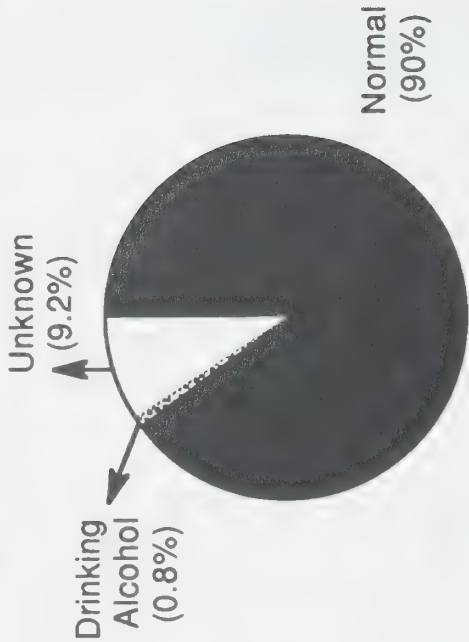


Figure 12. Distribution of Child Pedestrian Injuries, Children 5 - 9 Yrs Old: Drivers and Traffic Control: Hamilton, 1978 - 1991

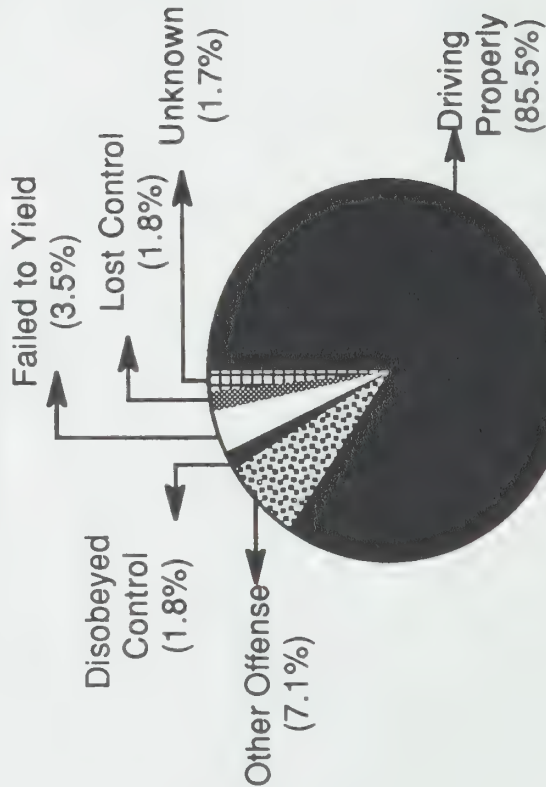
A. Type of Traffic Control



B. Condition of Driver



C. Driver Action



D. Vehicle Maneuver

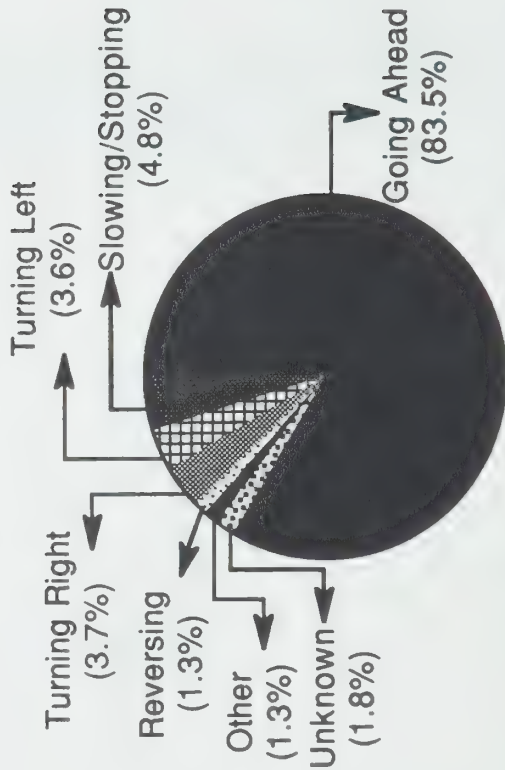


Table 1. Distribution of Child Pedestrian Injuries Involving  
Children 5 - 9 Yrs Old by Planning Unit:  
Hamilton, 1978 - 1991

Planning Unit	# of Injuries	Percent %
61	40	4.1
62	31	3.2
63	5	0.5
64	57	5.8
65	160	16.3
66	332	33.9
67	88	9.0
68	66	6.7
69	12	1.2
71	35	3.6
72	81	8.3
73	25	2.6
74	17	1.7
75	4	0.4
76	27	2.8
Total	980	100.0





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